

INVESTMENT MANAGEMENT

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BACKGROUND OF THE INVENTION

1. Field of the Invention

5 This invention relates to financial management systems and, more specifically, to data processing methodology for effecting an improved capital structure in financial institutions.

10 2. Description of the Prior Art

A number of financial management systems have been proposed in the past. Exemplary systems include U.S. Patent Numbers 4,194,242; 4,232,367; 4,321,672; 4,346,442
15 and 4,376,978. However, such prior systems address substantially different problems and accordingly, are substantially different from the inflation-adjusting program of the present invention.

20 During times of inflation, lenders and borrowers, whether they be institutions or individuals, must anticipate what the effects of inflation will be on the cash flow characteristics of a loan. Investors face a similar uncertainty. Traditionally, lenders compensate
25 for this uncertainty by including a premium in the interest rate charged on the loan. This premium represents what the lender feels will be the level of inflation during the term of the loan.

30 Loans which include a fixed inflation compensation factor are not immune to the effects of inflation. For example, when a lender anticipates a 6% annual inflation over the life of a loan and the actual average inflation turns out to be 10%, the lender has realized a 4% annual
35 loss in terms of real dollars. In addition, standard-fixed-payments loans ("SFPM's") exhibit a progressive

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5 burdensome in an inflationary environment in that they fail to account for appreciation of the mortgaged property.

15 adjustment of payments to compensate for what the lender
feels will be the inflationary effect on the loan during
the upcoming period. For example, a typical ARM is
indexed to a standard interest rate such as a particular
bank's prime rate or six-month Treasury bill average.
20 However, due to the fact that ARM's still reflect the
market's "expectation" of the inflation rate, their
inflation premiums may still not reflect the actual rate
of inflation.

30 interval since the previous adjustment. PLAM's have generally been indexed to one of the various consumer price indexes. Such indexing of the PLAM loan balance results in the deferral and capitalization of additional interest. The resulting PLAM loan serves to even out
35 equity accumulation during the life of the mortgage in contrast to SFPM's.

Another indexed mortgage instrument is the "modified" PLAM which combines some aspects of the traditional fixed rate mortgage with those of the PLAM. In particular, the modified PLAM has a fixed interest rate which includes a
5 specified inflation factor and, in addition, has a variable interest rate which will compensate the lender for inflation over and above the specified inflation factor.

10 Inflation-indexed loan instruments have advantages in that inflation risk to the lender is minimized. For example, with SFPM's during periods of inflation, the borrower realizes a windfall in terms of actual dollars where the loan rate is based on a low level of anticipated
15 inflation. Conversely, the lender has suffered a loss in terms of real dollars. Inflation indexed loans serve to solve this problem. However, the borrower under such instruments still faces much uncertainty: when inflation spirals, so do the loan payments. If inflation operates
20 similarly on the mortgaged or secured property, there is no loss in terms of real dollars. However, if the value of the property securing the loan does not inflate at the same rate as the loan balance, there is potentially an inflation loss.

25 Such problems have in the past prevented large-volume or commercial borrowers from taking advantage of inflation-indexed loans. That is, the uncertainty over whether the return on inflation-indexed borrowed funds
30 which have been reinvested, will compensate for the "cost" of those funds. This problem of unbalanced investments and loans is seen most acutely where one wishes to invest in a manner that will assure an inflation-adjusted return on the investment. One answer would be for institutions
35 to accept investment capital into deposit accounts which insure an inflation-adjusted return on the deposited

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funds. However, the risk to the lending institution is clear: such inflation-adjusted deposit accounts must in some manner be backed by inflation-adjusted dollars. Equally important, institutions engaged in lending and
5 borrowing funds require the ability to match funds which have been obtained on an inflation-indexed basis with some similary indexed funds which are lent out. Moreover, such institutions require the ability to assess the impact of inflation-adjusted deposit and loan accounts on their
10 capital structure.

Accordingly, the present invention addresses these problems by providing a system for implementing inflation indexed deposit accounts, for matching such accounts with
15 similarly indexed loan accounts and for anticipating the effects of these accounts on the existing capital structures of the institution or investor.

SUMMARY OF THE INVENTION

20 The foregoing and other problems of the prior art are solved by the system of the present invention which institutes inflation-adjusted deposit and loan accounts and matches such accounts to provide an improved capital
25 structure for a financial institution. The system projects the impact of inflation-indexed deposit and loan accounts on the institution's capital structure for preselected or anticipated inflationary environments. Based on such projections and other general considera-
30 tions, one of several forms of deposit accounts is selected according to the requisites of the depositor or borrower and those of the institution.

As contemplated under the present invention, the
35 accounts are characterized by a principal component and an accrual component. Principal component is that proportion

of the overall account balance attributable to the initial cash investment. The accrual component indicates that proportion of the overall account balance attributable to inflation and fixed interest. The account components are periodically enhanced or reduced in a manner specified by the characteristics of the particular account selected.

The accrual component will generally include both a fixed interest component and a variable interest component with the variable interest component being responsive to the rate of inflation. Responsive to the rate of inflation, as used herein, means directly responsive to a market indicator of prior actual inflation as it is not meant to include the market's expectation of future inflation. Under one alternative, the principal component is enhanced by the variable interest component and the account retired by retiring the fixed interest component by one schedule and retiring the principal component by a second schedule. However, the account may be retired by retiring both components over a similar schedule or by amortization. By varying the manner in which each respective component is accrued or retired, the cash flow characteristics of the account can be significantly altered to fit the requisites of the individual or institution. Cash flow is defined as the overall flow of cash units from the account, or a selected account component, to the account holder who will either be the lender or depositor, at a specified time.

Since the accrual component of either loan or deposit accounts may be adjusted in response to inflation, they can potentially exhibit unfavorable cash flows. Therefore, it is generally desirable to match loan accounts with deposit accounts, and further generally desirable to match accounts with similar intrinsic cash flow characteristics as specified by their accrual and retirement

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features. In this manner, cash flow patterns of the loan account would mirror those of the matched deposit account. Thus, during times of inflation, for example, negative cash flows attributable to outgoing retirement payments on deposit accounts will be compensated for by incoming payments on loan accounts.

Once the appropriate form of deposit and loan accounts are selected, matched and placed with the institution, data processing is utilized to service them during their respective terms. As referred to herein, the account term is the time period over which the account is retired or "paid out" to the account holder. The account term is generally divided into a plurality of adjustment or iteration periods, however, terms may be scheduled to include only a single iteration. Servicing includes the determination of inflation adjustments to the account balance or, alternatively, the inflation premium due the account holder. Servicing also includes features which protect the principal or balance of the accounts from the effects of deflation and reports all bookable income to holder.

Servicing further includes data processing for retiring and enhancing the accounts according to their respective terms and schedules. Retirement is meant to include a reduction in the particular account component and enhancement is meant to include an increase or accrual of the particular account component. For example, accrual components may be retired separately from the principal component by selecting separate schedules for each. Thus, for example, the principal may be retired semi-annually and the accrual retired annually. Schedules may be selected which adjust particular components by a predetermined amount. Alternatively, account components may be retired by amortization.

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BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is an overall schematic view of the inflation-adjusting account management system of the present invention;

Fig. 2 is a flow diagram of the steps for servicing Group I deposit or loan accounts;

Fig. 3 is a flow diagram of the steps for servicing Group II deposit or loan accounts;

Fig. 4 is a flow diagram of the steps for servicing Group IV deposit or loan accounts;

Fig. 5 is a schematic view of the deposit/loan matching process;

Fig. 6 is a graphic display of year-end balances and adjustment amortization of a typical Group IV Deposit Account;

Fig. 7 depicts the total principal and interest payments on the hypothetical Group IV deposit account of Fig. 6;

Fig. 8 is a graphic display of the bookable income components of the hypothetical Group IV deposit account of fig. 6;

Fig. 9 graphically compares the cash flows generated by a Group IV deposit account assuming a steady 8% inflation rate with the same account assuming a steady 6% inflation rate; and

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Fig. 10 is a graphic display of the buildup of positive cash flow from an original \$100 Group IV deposit account as a standard-fixed-payment loan.

5 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The System

Referring now to Fig. 1, there is shown in overall
10 scope an operational flow chart for implementing the deposit/loan inflation-adjusting system of the present invention. As therein depicted, the broad aspects of the system include an inflation-adjusted deposit account 2, an inflation-adjusted loan account 4, an intermediary
15 institution 6 and an account management dataprocessor 8.

In the most basic embodiment of the present invention, the intermediary institution 6 receives deposited funds in deposit accounts 2 and lends funds
20 through loan accounts 4. Retirement of these inflation-adjusted accounts are implemented by account management dataprocessor 8. Such data processing services the inflation-adjusting accounts in a number of ways, including the determination of their cash flow charac-
25 teristics in changing inflationary environments and determining the anticipated effects of inflation on the account balance. Characteristics of the individual accounts are tailored to meet the needs of the particular depositor.

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However, as illustrated in Fig. 1, the system of the present invention need not be limited to the three above mentioned fundamental aspects. In a preferred embodiment, an organizing company 10 acts as a synchronizer by
35 contacting depositors 12 through intermediary 6 or through a marketing agent 14, for example, a pension fund manager.

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Depositor characteristics are listed on a Deposit Funds Available Data File 16 ("DFADF"), wherein characteristics listed include a depositor identifier, the amount of funds available, the term of the account, the duration of the account, the type of account and the account retirement schedule. The amount of funds available is the total amount of funds sought to be deposited by the depositor. The term of the account is the length of time from the initial deposit until maturity (i.e., when the account has been entirely retired). The duration of the account, explained more fully below, is a mathematical expression of when the average time-weighted dollar is paid out of the account. The type of account, also explained in greater detail below, represents the particular accrual and retirement features of the deposit account. The retirement schedule refers to the timing of the iteration or payback periods and may include a predetermined retirement amount where appropriate.

Characteristics of borrowers 18 are similarly listed in a Loan Funds Desired Data File 20 ("LFDDF"), which includes the amount of funds sought to be borrowed, the term of years for which the funds are desired, the duration of the loan account, the type of loan account and the loan account retirement schedule. Additional parameters such as credit rating of the borrower or capacity of the lenders are generally included in the LFDDF or DFADF. Capacity represents the total funds the lending institution may wish to devote to particular categories of loan transactions, for example, commercial development loans.

Data processing capabilities are supplied for displaying and choosing the particular inflation-indexed account characteristics and for servicing the accounts once installed. Organizing company 10 may also act as a

10 Servicing the Accounts

In their most basic embodiment, Group I accounts include those accounts wherein the fixed-interest and inflation-adjusted interest components are retired as they accrue. In Group II accounts, both the fixed and adjustable components are retained as principal and thus add to the overall account balance. In Group III and IV accounts, the fixed interest component is paid out as it accrues and the adjustable component is added to account balance. Group III and IV accounts differ in that Group

IV accounts are retired by amortizing the account balance at each iteration period whereas Group III accounts are retired by a predetermined portion at each iteration period with the remaining balance being retired at the
5 final iteration.

Referring to Fig. 2, is shown a flow chart, adaptable to data processing, for servicing what are referred to herein as Group I deposit or loan accounts. Group I
10 accounts are characterized by a non-adjusted principal which is retired over a series of predetermined intervals or iterations. Alternatively, the principal may be retired in one lump sum payment at maturity. Because Group I accounts do not have adjusted principals, their
15 accrual components are also retired at predetermined intervals over the life or term of the accounts. As with the principal retirement, the accrual component may be retired in one lump sum payment at the end of the term. Alternatively, the accrual retirement may be scheduled in
20 a separate fashion from the principal retirement.

Generally, the Group I principal retirement schedule will consist of the retirement of the entire principal at the end of the term of the instrument. The accrual
25 component, on the other hand, is retired as it accrues at each iteration period, and does not accumulate or enhance the principal. This results in an instrument having cash flows closely resembling those of a "conventional" certificate of deposit or bond ("conventional" referring
30 to payment of a fixed rate of interest) with the difference that accrual payments will vary with the rate of inflation. Therefore, the cash flow characteristics of Group I accounts can be characterized generally as low during the term of the instrument, with a large payment at
35 the end. However, other principal retirement schedules are possible within the Group I framework, and cash flows

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As displayed in the flow diagram of Fig. 2, Group I accounts are serviced by first ascertaining, for example from DFADF or LFDDF, the initial balance, the fixed interest rate to be paid, the inflation index at the time of the deposit or loan, the total number of iterations or adjustment periods, and the schedules by which the principal and accrual components are to be retired. Proceeding through the flow diagram, the first operator, $I_r = I_{r-1}$, serves as a counter to determine the number of iterations remaining in the scheduled account term. The amount of the principal to be retired by cash disbursement to the account holder is determined by reference to the schedule. Once the current inflation index (CPI_c) is determined, the level of inflation since the last reporting period is estimated by consideration of a preselected inflation index which reflects prior actual inflation. A preferred embodiment of the present invention utilizes the consumer price index $CPI-U$, for all items. However, any number of indexes may be successfully utilized including, but not limited to $CPI-W$, Producer Price Index, the Implicit Price Deflator for the Gross National Product, or any component of these price level measures so long as the index reflects some measure of past inflation. The level inflation which has occurred since the previous iteration period can be determined by the formula:

$$\frac{CPI_c - CPI_o}{CPI_o}$$

Where CPI_0 is the inflation index at the time of the last
35 iteration, or the initial index if the present iteration
is the first.

The account servicing scheme makes the determination as to whether deflation has in fact taken place since the previous reporting period or iteration period. This test serves to protect against a possible negative cash flow which could result during deflationary periods. If deflation has taken place, no adjustment is made to the balance in response to the deflation, rather, deflation credits are stored and subsequently retired when inflation returns. Deflation credit is accumulated with deflation credit from prior iteration periods, if any, in the form of cumulative deflation credit ("CDC").

If, alternatively, inflation has occurred during the prior iteration period, the cash outflow or disbursement attributable to the effects of inflation on the account balance is determined by applying the inflation rate to the deposit balance. If the cumulative deflation credit is greater than the inflation disbursement, the CDC is reduced by that amount and the accrual disbursement to depositors is determined by applying the fixed interest rate to the principal.

If the CDC value is less than or equal to the calculated inflation disbursement factor, the disbursement factor is reduced in proportion to the CDC, if any, and the CDC set to zero. Accrual repayment is determined by applying the fixed interest rate to the balance and adding the product to the inflation disbursement factor. The account balance is adjusted to reflect both the principal and accrual retirement. Following a test to determine whether any iteration periods remain, the initial CPI (CPIo) is reset to equal the current CPI (CPIc), to allow for inflation rate determination at the next cycle.

Group II deposit accounts are characterized by a principal component that is enhanced by the accrual

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component. Thus, principal growth is observed on the one hand and the account is retired by retiring only the principal. Since all inflation and interest adjustments on the account serve to enhance the principal, only one
5 schedule of retirement is required. Group II accounts will generally demonstrate cash flows which do not react as quickly to rising inflation as those of Group I accounts. This is due to the fact that the accrual component of Group II accounts are not necessarily paid
10 out in their entirety at each iteration period as in Group I accounts. Rather, the accrual is retained as principal and retired by a preselected schedule, for example, by retiring a predetermined portion at each iteration period. This results in a straight-line reduction of the account
15 balance during the account term followed by a lump sum payment of the remaining balance at maturity. Alternatively, a schedule may be selected where the entire account is retired by one lump sum payment at maturity with no intervening retirements.

20

Referring now to Fig. 3, is shown a flow chart for servicing Group II accounts. As with Group I accounts, the parameters of initial account balance, fixed interest rate to be charged, the initial inflation index (CPI₀),
25 number of iteration periods, and account retirement schedules are supplied. The amount of principal to be retired is then determined by reference to the schedule. This amount is disbursed to the account holder.

30

The inflation rate is estimated and tested for deflation. If deflation has taken place, deflation credit is calculated and accumulated. If, alternatively, inflation has occurred, the amount of principal adjustment is determined by determining the product of the inflation
35 rate and the account balance prior to the present retirement. Fixed adjustment is represented by the

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product of the fixed interest rate and the balance. When the cumulative deflation credit (CDC) is greater than the inflation adjustment for any given iteration period, the CDC is reduced in proportion to the inflation adjustment and the account balance adjusted to reflect the principal retirement and enhanced to reflect the fixed adjustment.

Alternatively, when the inflation adjustment is higher than the CDC, the inflation adjustment is reduced in proportion to the CDC and the CDC reset to zero. Balance adjustment is accomplished by reducing the balance in proportion to the principal repayment and enhanced in proportion to fixed and inflation adjustment. Although under Group II accounts, actual cash flow consists of the principal retirement, "bookable" cash flow is represented by both principal retirement and inflation and fixed adjustments to the principal. Thus, this "bookable" inflation adjustment factor is reported to the account holder or borrower for, for example, income tax purposes.

Group III and IV accounts are characterized by an accrual component that is divided into a fixed interest component and a variable interest component with the variable component being responsive to inflation. For both Group III and IV accounts, the fixed interest component may be viewed as a part of the depositor's interest on the balance, and retired by a preselected schedule over the term of the deposit or by amortization. However, the variable interest component serves to enhance the principal and therefore represents a deferral and capitalization of interest into the principal. Therefore, principal growth is observed.

Group III and IV accounts differ in terms of how their respective adjusted principals are retired. In Group III deposits, the principal is retired by a preselected

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schedule over the term. Alternatively Group IV accounts have principals which are retired by amortization. Fig. 4 is illustrative of the mechanics of Group IV accounts. As depicted therein, Group IV accounts are serviced by first
5 determining the preliminary series of variables: the amount of the initial deposit, the fixed interest rate to be paid, the inflation index at the time of the deposit (CPI₀), the total number of iterations or adjustment periods (I_r) and the retirement schedule.

10

Proceeding through the flow chart of Fig. 4, as with the previous accounts the first operator counts the number of iterations remaining in the scheduled account term. The account balance amortization is calculated to
15 determine that portion of the principal to be retired at that iteration period. In particular, amortization of the balance is achieved using the formula:

20

$$R = \frac{A}{PVIF}$$

where: R is the payment due the account holder;

25

A is the amount of the balance to be amortized; and

PVIF is defined as

30

$$\sum_{i=1}^N \left(\frac{1}{(1+i)^i} \right)$$

35

where N is the number of iteration periods remaining + 1, and i is the fixed interest rate

The fixed interest component is calculated by
40 applying the fixed interest rate to the account balance. Once determined, fixed interest component is generally retired during the present iteration by disbursement to

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the account holder. Alternatively, the fixed component may be withheld for later retirement, depending upon the requirements of the particular schedule.

5 The inflation rate is estimated and tested for deflation. With Group IV accounts, during times of deflation, one would expect a diminishment of the balance in proportion to the resultant increase in "real" dollars on deposit. However, the present system avoids this
10 diminishment by storing deflationary units in the form of deflation credit. As with the foregoing account groups, deflation credit is cumulated, reserved and not applied against the account balance until inflation resumes to a sufficient level to counter it.

15 Thus, when the inflation adjustment is greater than the CDC, the account balance is reduced in proportion to the principal retired and enhanced in proportion to the level of inflation. If deflation credit has accumulated
20 to a greater extent than the inflation adjustment during the prior iteration period, the balance is reduced only in proportion to the principal retirement. Once a new balance is established, the iteration cycle is completed by testing whether the present cycle represents the final
25 iteration period and, if not, by setting the index level of the present cycle equal to the initial index for use in the next cycle.

 The flow chart of Fig. 4 may be modified to service
30 Group III accounts by retiring a set proportion or amount of the balance instead of amortizing the balance. Since such a retirement is of a "preselected amount," the final iteration may include a lump sum payment of the balance which remains. That is, the principal retirement of Group
35 III accounts, being a preselected amount, would not necessarily track the inflation adjustments, thus

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potentially leaving an unretired portion due the account holder at maturity.

Matching Deposit Accounts with Loan Accounts

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During times of high inflation, an inflation - indexed deposit account, standing alone, would present a substantial risk to the capital structure of the institution that receives and services them. This is the
10 result of the fact that more inflated dollars must necessarily be deposited into the account by the institution at each iteration period to maintain a constant account balance in terms of real dollars. To remove this risk, the present invention provides a system
15 for matching the foregoing inflation-adjusted deposit accounts with loan accounts.

Referring to Fig. 5, is shown in representative fashion, a flow diagram of the matching process.
20 Investors or Depositors 12 direct Deposit Account Manager 14, for example, a pension fund manager, to file Notice of Availability 24 ("NA") of funds for inflation-adjusted deposit accounts 2 with organizing company 10. Alternatively, those investors 26 not represented by account
25 manager 14 file NA 24 directly with organizing company 10. Similarly, borrowers 18 or loan account managers 22, for example, mortgage brokers, file Notice of Demand 28 ("ND") for inflation-adjusted loan funds. Both ND 28 and NA 24 include such parameters as amount of funds available
30 or demanded term of account, duration of account, and type of account including its proposed schedule. Independent variables such as credit rating of borrower 18, characteristics of project for which funds are sought and underwriting constraints if any, may be included in the ND
35 28. Organizing company 10, or alternatively intermediary 6 lists the characteristics on parallel databases, DFADF

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16 and LFADF 20, representing supply funds and demand funds, respectively.

Accounts are matched by matching parameters stored in DFADF 16 or LFDDF 20 to create a Hierarchical Matching File 30 ("HML"). Parameters of the demand and supply files 16,20 are thus matched according to hierarchal considerations generally including account amount, term and duration as primary considerations. A plurality of loans may be matched with a single deposit, or a plurality of deposits with a single loan, in order to match the overall amounts. In situations where a plurality of loans are matched with a plurality of deposits, the various amounts are totaled to achieve a total balance match.

15

Duration is a mathematical expression of when the average time-weighted dollar is either received or paid out of a particular account. It provides information concerning the size and timing of the payment stream or cash flow of the account. Moreover, duration embodies an expression of the relation of payment or disbursement size to yield-to-maturity of the account. The mathematical expression of the formula is:

25

$$D = \frac{\sum_{t=1}^m \frac{tCF_t}{(1+r)^t}}{\sum_{t=1}^m \frac{CF_t}{(1+r)^t}}$$

30

Where D = duration, r = yield-to maturity, t = time of cash flow, m = term and CF_t = cash flow at time, t.

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When this formula is applied for example, to a \$1,000 standard-fixed-payment deposit account with a five-year term and 12% total annual interest, the calculated duration is 4.04 years. That is, the average time-weighted dollar is paid out at 4.04 years. In general, group I accounts will show greater cash flows early in their terms relative to group II accounts, therefore group I accounts will often have lower durations than scheduled group II accounts. The duration of Group III and IV accounts will generally fall between that of Group I and II accounts. Therefore, duration is an expression of the average cash flow of the account. In matching the duration of a loan account with that of a deposit account, or in matching the average duration of a plurality of accounts, the cash flows of deposit and loan accounts so matched will compensate for one another, thereby protecting the capital structure of the intermediary.

After matching is achieved by the HMF 20, borrowers 18 and depositors 12, or their respective account managers 22,14, are notified of the match and deposit and loan accounts 2,4 are formalized 32 followed by the transfer of funds 34 to intermediary 6. Accounts will then be serviced by the account management dataprocessor 8.

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Example I:
Servicing of Inflation - Adjusted
Deposit Accounts

30 Data processing and post-data processing activities are utilized to service the Group IV deposit accounts of the present invention by periodically adjusting the outstanding balance of the account to reflect the effects of inflation on it.

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a. Mechanics of a Typical Group IV Deposit Account

Referring to Fig. 6 is shown a representative example of a hypothetical Group IV deposit account in terms of its year-end balance and adjustment amortization. The deposit account therein depicted assumes an initial balance of \$100, a fixed annual interest rate of 4%, a steady inflation rate 8% (e.g., an 8% steady annual increase in the CPI), a 30-year term with 30 annual iteration periods, and a schedule which retires the fixed interest component as it accrues (i.e., annually).

As will be appreciated by those skilled in the art, the deposit account of the present example is somewhat similar to a 30-year annuity which is supplemented annually with additional annuities to reflect the higher price level in the economy. Thus, the fixed amortization rate becomes a real interest rate because the depositor also receives additional interest equal to the inflation rate multiplied by the account balance. Each iteration period, if there is a positive increase in the CPI, additional inflation interest accrues but it is payable over the remaining term as an additional stream of annuity payments. The deposit account can be viewed as 30 separate annuities with an original annuity and potentially 29 annual inflation additions.

The depositor's total receipts (including principal and interest) on the deposit account increase in lock-step with the CPI so that the payment the depositor receives is constant in real purchasing power. In this graphical presentation the inflation rate is a steady 8% for the entire 30-year term of the account so the depositor's payment increases by 8% each year. The deposit balance changes on any distribution date since inflation interest is added to the deposit balance and the annuity payment

b. Comparing The Effects of Anticipated
15 Levels of Inflation on the Account

Table II was also generated using the flow scheme of Fig. 4 and displays the cash flow characteristics of the same Group IV account but including an anticipated inflation rate of 6% instead of 8%. All other variables, including the term, deposit amount and fixed interest rate, are the same. The comparative cash flows for 8% and 6% inflation are displayed graphically in Fig. 9. Note

TABLE I

DEPOSIT AMOUNT:	\$100.00	INTEREST RATE:	4.00%
TERM IN YEARS:	30	INFLATION:	8.00%

ANALYSIS FOR DEPOSITOR:

YEAR	BOOKABLE INFLATION ADJUSTMENT	INTEREST EARNED	DEPOSIT RETURNED	YEAR END BALANCE	CASH FLOW
0				100.0000	
1	8.0000	4.0000	1.7830	106.2170	5.7830
2	8.4974	4.2487	2.0054	112.7090	6.2540
3	9.0167	4.5084	2.2556	119.4701	6.7640
4	9.5576	4.7788	2.5374	126.4903	7.3162
5	10.1192	5.0596	2.8546	133.7550	7.9142
6	10.7004	5.3502	3.2117	141.2436	8.5619
7	11.2995	5.6497	3.6140	148.9292	9.2637
8	11.9143	5.9572	4.0671	156.7764	10.0243
9	12.5421	6.2711	4.5777	164.7408	10.8487
10	13.1793	6.5896	5.1531	172.7669	11.7427
11	13.8214	6.9107	5.8018	180.7865	12.7125
12	14.4629	7.2315	6.5334	188.7160	13.7648
13	15.0973	7.5486	7.3587	196.4546	14.9073
14	15.7164	7.8582	8.2901	203.8809	16.1483
15	16.3105	8.1552	9.3418	210.8496	17.4971
16	16.8680	8.4340	10.5301	217.1875	18.9640
17	17.3750	8.6875	11.8734	222.6891	20.5609
18	17.8151	8.9076	13.3934	227.1108	22.3009
19	18.1689	9.0844	15.1147	230.1650	24.1992
20	18.4132	9.2066	17.0665	231.5117	26.2731
21	18.5209	9.2605	19.2828	230.7498	28.5433
22	18.4600	9.2300	21.8042	227.4055	31.0342
23	18.1924	9.0962	24.6798	220.9181	33.7760
24	17.6735	8.8367	27.9704	210.6212	36.8071
25	16.8497	8.4248	31.7537	195.7173	40.1785
26	15.6574	7.8287	36.1347	175.2399	43.9634
27	14.0192	7.0096	41.2673	147.9919	48.2769
28	11.8393	5.9197	47.4090	112.4222	53.3287
29	8.9938	4.4969	55.1089	66.3071	59.6058
30	5.3046	2.6523	66.3071	5.3046	68.9594

* THE BOOKABLE INFLATION ADJUSTMENT FOR THE 30TH YEAR WILL BE ADDED TO THE OTHER CASH FLOW COMPONENTS AND PAID AT THAT TIME, SO THE FINAL BALANCE WILL BE 0.

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TABLE II

DEPOSIT AMOUNT:	\$100.00	INTEREST RATE:	4.00%
TERM IN YEARS:	30	INFLATION:	6.00%

ANALYSIS FOR DEPOSITOR:

YEAR	BOOKABLE INFLATION ADJUSTMENT	INTEREST EARNED	DEPOSIT RETURNED	YEAR END BALANCE	CASH FLOW
0				100.0000	
1	6.0000	4.0000	1.7830	104.2170	5.7830
2	6.2530	4.1687	1.9676	108.5024	6.1363
3	6.5101	4.3401	2.1715	112.8411	6.5116
4	6.7705	4.5136	2.3966	117.2150	6.9102
5	7.0329	4.6886	2.6452	121.6026	7.3338
6	7.2962	4.8641	2.9199	125.9789	7.7840
7	7.5587	5.0392	3.2234	130.3142	8.2626
8	7.8189	5.2126	3.5588	134.5743	8.7713
9	8.0745	5.3830	3.9294	138.7194	9.3124
10	8.3232	5.5488	4.3392	142.7034	9.8879
11	8.5622	5.7081	4.7922	146.4733	10.5004
12	8.7884	5.8589	5.2933	149.9684	11.1523
13	8.9981	5.9987	5.8478	153.1187	11.8465
14	9.1871	6.1247	6.4614	155.8445	12.5861
15	9.3507	6.2338	7.1408	158.0543	13.3746
16	9.4833	6.3222	7.8934	159.6442	14.2156
17	9.5787	6.3858	8.7276	160.4953	15.1134
18	9.6297	6.4198	9.6528	160.4722	16.0726
19	9.6283	6.4189	10.6798	159.4207	17.0987
20	9.5652	6.3768	11.8209	157.1651	18.1977
21	9.4299	6.2866	13.0904	153.5046	19.3770
22	9.2103	6.1402	14.5051	148.2097	20.6453
23	8.8926	5.9284	16.0849	141.0174	22.0133
24	8.4610	5.6407	17.8542	131.6243	23.4949
25	7.8975	5.2650	19.8439	119.6779	25.1089
26	7.1807	4.7871	22.0958	104.7627	26.8829
27	6.2858	4.1905	24.6706	86.3779	28.8611
28	5.1827	3.4551	27.6710	63.8896	31.1262
29	3.8334	2.5556	31.3184	36.4045	33.8740
30	2.1843	1.4562	36.4045	2.1843	37.8607

* THE BOOKABLE INFLATION ADJUSTMENT FOR THE 30TH YEAR
WILL BE ADDED TO THE OTHER CASH FLOW COMPONENTS AND
PAID AT THAT TIME, SO THE FINAL BALANCE WILL BE 0.

that there is a significant increase in payments in the later years of the Group IV account term with 8% when compared to 6% inflation.

5 Thus, by inserting various anticipated inflation rates into the servicing schemes of the present invention, the effects of inflation on the resultant cash flows of the account may be ascertained. In this manner, the effects of such accounts on the capital structure of the account holder may be anticipated and both cases prove that the depositor would receive a stream of payments with constant buying power at any time in the future regardless of the behavior of inflation.

15

Example II:

The Partially-Hedged Program

20 A lending institution, under certain circumstances, may desire to match an inflation-adjusted deposit account with a standard-fixed-payment mortgage loan. Under such a "partially-hedged" match, the net cash flow to the institution during periods of lower inflation will be higher than during periods of high inflation. That is, the standard-fixed-payment loan will generate a fixed cash flow whereas the deposit account must be satisfied with the inflation-adjusted dollars.

30 For example, Fig. 10 displays the buildup of positive cash flow from an original \$100 inflation-adjusted Group IV deposit account and a standard-fixed-payment loan program which are tracked for 30 years under the assumption that the deposits were used to fund 5-year loans at 10.5%, payable monthly, with principal amortized in equal semiannual payments and with net cash flows reinvested immediately on the same basis. These loan

proceeds are compared to the cash obligations on the deposit account.

These calculations from a simultaneous deposit-loan transaction do not include any of the costs of loan administration or the servicing costs of the deposit account, which is minimal with large institutional deposits. The servicing fee has been netted out but there is no need to deduct the customary costs of a retail deposit activity from this spread.

Though the net interest spread is quite large not all of this cash flow needs to be immediately reflected as income for tax purposes since the inflation adjustment interest must be recognized as an expense for accounting and tax purposes. The accrual of the interest expense has the effect of reducing taxable income in the early years of the deposit account term. The accrual of the inflation adjustment interest to the deposit account balance is accurately reflected in the intermediaries' deposit liabilities and also in the intermediaries' net worth.

Table III shows both asset and liability balance adjustments through the 30-year term on the original \$100 deposit and loan as well as the net return on assets. Even with only a 10.5% loan fixed rate, the net return on assets is reasonably high at 1.11% and grows over time. Tables IV and V convey the same information under an assumed loan rate of 11.5% and 12.5%, respectively. As one of skill in the art will appreciate, these higher loan rates substantially increase the net return on assets.

Interest Rate Risk

The actual net income and return on assets would depend on the spread of the loan rate above the cost of

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funds. The cost of funds in turn depends on the inflation rate. In a fixed rate market with a 10.5% prime rate and less than 4% inflation the spread is quite large and would result in a return on assets of approximately 2.5% if all
5 funds were loaned out at prime.

An acceleration in inflation rates causes financial markets to adjust to higher inflation rates by increasing interest rates. If a surge of inflation were to occur
10 this would work to the intermediary's benefit. Since short-term loan rates are highly sensitive to an acceleration of inflation, revenues should respond immediately whereas the inflation interest cost accrues but is paid out smoothly over time.

15 Furthermore, the market's response to inflation causes bank loan rates to increase more than the inflation rate. For example, in 1979 when inflation rates peaked out at 13%, prime reached 21% which would have substan-
20 tially increased the bank's cash flows and after tax spreads. Acceleration of inflation and interest rates insulates the commercial bank from the payment shock of higher money market CD rates and widens the spread.

25 Generally with high interest rates and tight monetary policy there is a yield curve inversion in which short-term rates exceed long-term rates. This too would open enormous profit opportunities for the commercial intermediary since the inflation-adjusted deposit funds
30 are borrowed long and lent short.

The more significant risk to the commercial intermediary is from a reduction of inflation and interest rates. This, however, presents no special difficulties
35 because the inflation interest is scaled down to the actual inflation rate. From the lending side lower

TABLE III

AB DEPOSIT INFORMATION:				LOAN INFORMATION:				OPTIONAL			
INITIAL DEPOSIT:				TERM & AMORTIZATION:				10.50%			
TERM (years):				LOAN & REINVESTMENT RATE(1):				0.00%			
REAL INTEREST RATE:				ORIGINATION FEE:				0.00%			
INFLATION RATE (1):				BANK INFORMATION							
TH ARRANGEMENT FEE:				MARGINAL TAX RATE:				0.00%			
TH ANNUAL SERVICE FEE:				DIVIDEND PAYOUT RATIO:				0.00%			

BALANCE SHEET											
YEAR	AB DEPOSIT BALANCE	LOAN BALANCE	NET WORTH (2)	INTEREST INCOME(3)	AB DEPOSIT SERVICE	NET CASH FLOW(3)	NET INCOME (2)	RETURN ON AVG ASSETS	CAPITAL TO ASSET RATIO		
0	\$100.000	\$99.000	\$0.119	\$10.910	\$6.468	\$4.442	\$1.119	1.11%	0.12%		
1	103.063	103.182	1.410	11.371	6.775	4.596	1.291	1.23	1.31		
2	106.109	107.519	2.892	11.849	7.097	4.752	1.482	1.35	2.58		
3	109.122	112.014	4.589	12.344	7.434	4.911	1.696	1.48	3.93		
4	112.084	116.673	6.524	12.858	7.786	5.072	1.935	1.62	5.37		
5	114.976	121.499	8.725	13.390	8.154	5.236	2.201	1.78	6.90		
6	117.773	126.497	11.223	13.940	8.539	5.402	2.498	1.93	8.52		
7	120.449	131.672	14.051	14.511	8.941	5.570	2.828	2.10	10.25		
8	122.976	137.027	17.246	15.101	9.361	5.740	3.195	2.29	12.10		
9	125.321	142.567	20.850	15.711	9.801	5.910	3.604	2.48	14.06		
10	127.447	148.297	24.908	16.343	10.260	6.082	4.058	2.68	16.15		
11	129.313	154.221	29.471	16.996	10.741	6.255	4.563	2.90	18.38		
12	130.872	160.343	34.594	17.670	11.243	6.427	5.123	3.13	20.76		
13	132.074	166.668	40.340	18.367	11.768	6.599	5.746	3.38	23.29		
14	132.861	173.200	46.776	19.087	12.317	6.770	6.436	3.65	25.99		
15	133.168	179.944	53.978	19.830	12.892	6.939	7.203	3.93	28.88		
16	132.925	186.904	62.031	20.597	13.493	7.105	8.053	4.23	31.96		
17	132.052	194.083	71.026	21.389	14.122	7.267	8.995	4.55	35.25		
18	130.459	201.485	81.066	22.204	14.781	7.423	10.040	4.89	38.77		
19	128.048	209.114	92.264	23.045	15.472	7.573	11.198	5.26	42.52		
20	124.707	216.970	104.745	23.911	16.198	7.713	12.481	5.65	46.54		
21	120.312	225.057	118.648	24.802	16.962	7.840	13.903	6.07	50.84		
22	114.724	233.372	134.127	25.718	17.768	7.951	15.479	6.51	55.44		
23	107.786	241.913	151.351	26.660	18.621	8.039	17.224	6.99	60.38		
24	99.320	250.671	170.509	27.625	19.530	8.104	19.158	7.51	65.67		
25	89.123	259.632	191.811	28.612	20.509	8.104	21.301	8.06	71.37		
26	76.959	268.770	215.486	29.619	21.576	8.042	23.677	8.66	77.50		
27	62.549	276.036	241.802	30.666	22.781	7.859	26.314	9.31	84.15		
28	45.539	287.342	271.051	31.666	24.226	7.440	29.249	10.02	91.42		
29	25.438	296.490	303.605	32.674	26.341	6.333	32.553	10.83	99.58		
30	1.272	304.877									

(1) THESE RATES ARE TREATED AS CONSTANTS; HOWEVER, IF INFLATION INCREASES LENDING RATES ALSO RISE.
 (2) THE NET WORTH AND INCOME COLUMNS ARE NET OF LOAN ORIGINATION AND SERVICING COSTS, FEES, TAXES AND DIVIDENDS AT THE STATED RATES.
 (3) PRINCIPAL REPAYMENTS ARE PRESUMED TO BE REINVESTED AND THEREFORE ARE EXCLUDED FROM THE CASH FLOW ANALYSIS.

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TABLE IV

<p>INITIAL DEPOSIT: \$100</p> <p>TERM (years): 30</p> <p>REAL INTEREST RATE: 3.50%</p> <p>INFLATION RATE (1): 5.00%</p> <p>TH ARRANGEMENT FEE: 1.00%</p> <p>TH ANNUAL SERVICE FEE: 1.00%</p>									
<p>TERM & AMORTIZATION:</p> <p>LOAN & REINVESTMENT RATE(1):</p> <p>ORIGINATION FEE:</p> <p>BANK INFORMATION</p> <p>MARGINAL TAX RATE:</p> <p>DIVIDEND PAYOUT RATIO:</p>									
<p>OPTIONAL</p> <p>11.50%</p> <p>0.00%</p> <p>0.00%</p>									
BALANCE SHEET									
YEAR	AB DEPOSIT BALANCE	LOAN BALANCE	NET WORTH (2)	INTEREST INCOME(3)	AB DEPOSIT SERVICE	NET CASH FLOW(3)	NET INCOME (2)	RETURN ON AVG ASSETS	RATIOS CAPITAL TO ASSET RATIO
0	\$100.000	\$99.000	\$1.214	\$12.005	\$6.468	\$5.537	\$2.214	2.18%	1.16%
1	103.063	104.277	3.778	12.645	6.775	5.869	2.564	2.39	3.44
2	106.109	109.887	6.736	13.325	7.097	6.228	2.958	2.62	5.81
3	109.122	115.858	10.137	14.049	7.434	6.615	3.401	2.86	8.29
4	112.084	122.221	14.035	14.820	7.786	7.035	3.898	3.10	10.88
5	114.976	129.010	18.490	15.644	8.154	7.490	4.455	3.36	13.57
6	117.773	136.263	23.570	16.523	8.539	7.985	5.080	3.63	16.37
7	120.449	144.020	29.351	17.464	8.941	8.523	5.781	3.90	19.27
8	122.976	152.328	35.917	18.471	9.361	9.110	6.566	4.19	22.28
9	125.321	161.238	43.361	19.552	9.801	9.751	7.444	4.48	25.39
10	127.447	170.808	51.789	20.712	10.260	10.452	8.427	4.79	28.60
11	129.313	181.101	61.316	21.960	10.741	11.219	9.527	5.10	31.90
12	130.872	192.188	72.074	23.305	11.243	12.062	10.758	5.43	35.30
13	132.074	204.148	84.207	24.755	11.768	12.987	12.133	5.76	38.79
14	132.861	217.067	97.877	26.321	12.317	14.004	13.670	6.10	42.36
15	133.168	231.046	113.266	28.016	12.892	15.125	15.389	6.45	46.01
16	132.925	246.191	130.574	29.853	13.493	16.360	17.308	6.80	49.72
17	132.052	262.626	150.026	31.846	14.122	17.724	19.452	7.16	53.49
18	130.459	280.485	171.873	34.011	14.781	19.231	21.847	7.53	57.31
19	128.048	299.921	196.394	36.368	15.472	20.896	24.521	7.90	61.16
20	124.707	321.101	223.900	38.936	16.198	22.738	27.507	8.27	65.05
21	120.312	344.212	254.741	41.739	16.962	24.777	30.840	8.64	68.95
22	114.724	369.465	289.302	44.801	17.768	27.034	34.561	9.02	72.86
23	107.786	397.088	328.017	48.151	18.621	29.530	38.715	9.39	76.76
24	99.320	427.337	371.369	51.819	19.530	32.288	43.352	9.77	80.65
25	89.123	460.492	419.897	55.839	20.509	35.390	48.528	10.14	84.51
26	76.959	496.856	474.203	60.248	21.578	38.671	54.306	10.51	88.35
27	62.549	536.752	534.963	65.086	22.781	42.305	60.760	10.88	92.16
28	45.539	580.503	602.938	70.391	24.226	46.165	67.975	11.25	95.95
29	25.438	628.376	679.014	76.197	26.341	49.855	76.076	11.63	99.81
30	1.272	680.286							

(1) THESE RATES ARE TREATED AS CONSTANTS; HOWEVER, IF INFLATION INCREASES LENDING RATES ALSO RISE.
 (2) THE NET WORTH AND INCOME COLUMNS ARE NET OF LOAN ORIGINATION AND SERVICING COSTS. FEES, TAXES AND DIVIDENDS AT THE STATED RATES.
 (3) PRINCIPAL REPAYMENTS ARE PRESUMED TO BE REINVESTED AND THEREFORE ARE EXCLUDED FROM THE CASH FLOW ANALYSIS.

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TABLE V

<p>INITIAL DEPOSIT: \$100</p> <p>TERM (years): 30</p> <p>REAL INTEREST RATE: 3.50%</p> <p>INFLATION RATE (1): 5.00%</p> <p>TH ARRANGEMENT FEE: 1.00%</p> <p>TH ANNUAL SERVICE FEE: 1.00%</p>									
<p>TERM & AMORTIZATION:</p> <p>LOAN & REINVESTMENT RATE(1):</p> <p>ORIGINATION FEE:</p> <p>BANK INFORMATION</p> <p>MARGINAL TAX RATE:</p> <p>DIVIDEND PAYOUT RATIO:</p>									
<p>OPTIONAL</p> <p>12.50%</p> <p>0.00%</p>									
YEAR	BALANCE SHEET			CASH FLOWS			RATIOS		
	AB DEPOSIT BALANCE	LOAN BALANCE	NET WORTH (2)	INTEREST INCOME(3)	AB DEPOSIT SERVICE	NET CASH FLOW(3)	NET INCOME (2)	RETURN ON AVG ASSETS	CAPITAL TO ASSET RATIO
0	\$100.000	\$99.000	\$2.318	\$13.109	\$6.468	\$6.641	\$3.318	3.25%	2.20%
1	103.063	105.381	6.192	13.954	6.775	7.179	3.874	3.56	5.51
2	106.109	112.301	10.696	14.870	7.097	7.773	4.504	3.88	8.93
3	109.122	119.818	15.914	15.866	7.434	8.432	5.218	4.21	12.43
4	112.084	127.998	21.940	16.949	7.786	9.163	6.026	4.55	16.02
5	114.976	136.916	28.881	18.130	8.154	9.976	6.941	4.90	19.69
6	117.773	146.654	36.858	19.419	8.539	10.881	7.977	5.25	23.43
7	120.449	157.307	46.005	20.830	8.941	11.889	9.147	5.61	27.23
8	122.976	168.982	56.476	22.376	9.361	13.015	10.470	5.97	31.07
9	125.321	181.797	68.441	24.073	9.801	14.272	11.965	6.34	34.94
10	127.447	195.888	82.095	25.939	10.260	15.678	13.654	6.70	38.83
11	129.313	211.408	97.656	27.994	10.741	17.253	15.561	7.07	42.73
12	130.872	228.528	115.370	30.261	11.243	19.018	17.714	7.44	46.62
13	132.074	247.444	135.514	32.766	11.768	20.997	20.144	7.81	50.49
14	132.861	268.374	158.400	35.537	12.317	23.220	22.886	8.17	54.33
15	133.168	291.568	184.380	38.608	12.892	25.717	25.980	8.53	58.11
16	132.925	317.305	213.851	42.016	13.493	28.524	29.471	8.89	61.82
17	132.052	345.903	247.261	45.803	14.122	31.681	33.410	9.23	65.46
18	130.459	377.720	285.113	50.016	14.781	35.235	37.852	9.57	69.01
19	128.048	413.160	327.974	54.709	15.472	39.237	42.862	9.90	72.45
20	124.707	452.681	376.487	59.942	16.198	43.744	48.513	10.22	75.78
21	120.312	496.799	431.372	65.784	16.962	48.822	54.885	10.53	78.99
22	114.724	546.096	493.445	72.312	17.768	54.544	62.072	10.82	82.07
23	107.786	601.231	563.622	79.613	18.621	60.992	70.177	11.10	85.02
24	99.320	662.942	642.939	87.784	19.530	68.254	79.317	11.37	87.83
25	89.123	732.062	737.545	96.937	20.509	76.428	89.626	11.63	90.49
26	76.959	809.524	833.817	107.194	21.578	85.616	101.252	11.87	93.02
27	62.549	896.365	948.184	118.693	22.781	95.912	114.367	12.10	95.42
28	45.539	993.723	1077.352	131.585	24.226	107.359	129.168	12.32	97.69
29	25.438	1102.790	1223.258	146.027	26.341	119.686	145.906	12.54	99.90
30	1.272	1224.530							

(1) THESE RATES ARE TREATED AS CONSTANTS; HOWEVER, IF INFLATION INCREASES LENDING RATES ALSO RISE.

(2) THE NET WORTH AND INCOME COLUMNS ARE NET OF LOAN ORIGINATION AND SERVICING COSTS, FEES, TAXES AND DIVIDENDS AT THE STATED RATES.

(3) PRINCIPAL REPAYMENTS ARE PRESUMED TO BE REINVESTED AND THEREFORE ARE EXCLUDED FROM THE CASH FLOW ANALYSIS.

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inflation rates do tend to lower interest rates but not quite one for one, as sceptical lenders demand inflation risk premiums against the possibility of renewed future inflation.

5

If deflation were actually to occur the inflation-adjusted Group IV deposit account still calls for interest payments based on the fixed amortization rate and deflation results in credits which carry forward to offset
10 future inflation interest. While the deposit rate at a minimum is equal to the fixed amortization rate of 3.5%, loan rates should be sufficient to cover the fixed amortization rate.

15

Example III:
The Fully-Hedged Program

a. Hedging the Interest Rate Risk

20

It is possible to fully hedge the inflation interest cost by lending funds received by the intermediary in deposit accounts on an inflation-adjusting loan rate basis. An intermediary could, for example, make funds available to corporate borrowers for medium-term corporate
25 needs of between 3 and 10 years. The present invention provides an inflation-adjusting loan account similar in structure to the inflation-adjusted deposit but, preferably, with a shorter maturity. Again, the lengthy deferrals on the deposit and the shorter repayment
30 schedules on the loan allows the intermediary bank to capitalize on the time value of the more rapid principal repayment on the assets than is needed to service the liabilities. The return on assets is magnified by these deferrals.

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Such hedging would eliminate real interest rate risk during the term of the account having the shortest maturity, but would not achieve a "matched" asset and liability balance for the intermediary. This variation of the hedged program is not fully matched because there are dissimilar terms to maturity of the loan accounts as compared to the deposit accounts. Thus, when the term of both accounts are dissimilar, some degree of risk will still be present for the intermediary. This is because upon renewal of the account having the shorter term, a variation in fixed or "real" interest rates may have developed in the market. And potentially, the intermediary could find itself with unbalanced cash flows. The different terms would also leave the intermediary with an unmatched balance sheet. However, it may nevertheless be desirable for intermediaries to hedge inflation-adjusted loan and deposit accounts without fully matching terms because certain intermediaries may be unable to solicit sufficient numbers of long-term loan accounts with adequate underwriting characteristics to satisfy a fully matched program.

b. The Fully Hedged "Matched" Program

It is also possible to exactly match the inflation-adjusting deposit with an inflation-adjusting loan of equal maturity which would totally reduce the financial risk from variable inflation rates and yield curve inversions. In this case, the intermediary would be servicing long-term loans, most likely to finance real estate or other durable plant and equipment. With similar maturities of both the loan and deposit accounts, the intermediary can earn a constant spread over its cost of money with matching deposit and loan contracts. This would fully hedge the real interest rate risk. These

loans would also generate substantial front end fees for the intermediary.

Table VI illustrates the effect on the balance sheet and cash flow of an intermediary when the intermediary takes the excess cash flow generated by the matched accounts and reinvests this in new loan accounts with similar terms to the original account. In contrast to Table III, there are generally origination fees associated with such long term loans, which would be equal to the arrangement fees charged by the organizer. It can be observed in Table VI that the total net worth generated by such a fully matched program would be more advantageous to the intermediary than the total net worth generated by a situation such as depicted in Table III, in spite of the fact that receipts by the intermediary would be substantially lower in the initial years than those generated by the partially hedged programs.

Again, in contrast to the situation of a partially hedged program, the exact match between the loan and the deposit account results in identical net cash flow and net income, without the need to rely upon the current tax code in order to generate an additional advantage to the intermediary. The fully matched program will also have in effect a higher initial return on average assets. It should be pointed out that Table VI assumes that the income from the loan accounts flows into the intermediary on a monthly basis and the payments due the deposit account holder must be made on a yearly basis. In this period of time, the intermediary has had the opportunity to invest these funds at the stated float investment rate.

Table VII shows the situation under a fully hedged matched program wherein the loan account and deposit account both have an initial balance of \$100 and a term of

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30 years. In Table VII, no assumption is made regarding any reinvestment by the intermediary of the income obtained from the loan account. Rather, it demonstrates what the yearly income to the intermediary would be before
5 covering the annual service fee to the organizer under the column titled Spread Retained. Both the loan and deposit accounts have identical values throughout the term of the accounts. These values are shown under the column titled Adjusted Principal. The cash income generated to the
10 intermediary is shown in Table VII under the column titled ABML Payments. This income has two components: the principal payment and the interest payment. The interest payment in turn is split into the portion of interest that is passed through to the deposit account holder and the
15 portion that is retained by the intermediary institution shown under the column titled Spread Retained.

The advantages of such a loan program to the intermediary are further depicted in Table VII in the
20 remaining column, where in this case an assumption has been made that a property with a market value of \$125 is financed by the loan account, and the loan granted by the intermediary represents 80% of the value of such a property. Table VII further makes an assumption that the
25 property increases in value over time in direct proportion to inflation and as a result if such a property generated operating net income before debt service at a rate of 9.5% of its value such operating income would increase over time also in direct proportion to inflation.

30

The next column of Table VII titled Loan to Value Ratio shows how each year the principal repayment which takes place reduces the loan to value ratio from the initial 80% to levels of 60% by year 11, 40% by year 19,
35 21% by year 25 and essentially 0 by the end of the 30th year. The debt coverage ratio which is calculated by

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dividing the net operating income of a property by the payments due for debt service thereon is much higher than that consistently found in such loans by those skilled in the art, with a resulting value of 1.49 in the first year
5 whereas the industry standards usually range between 1.0 and 1.2.

To further emphasize the advantages to the intermediaries, it should be pointed out that this debt
10 coverage ratio of 1.49 is improved in subsequent years to levels of 1.55 by year 14, 1.64 by year 21, 1.75 by year 27, etc. The last column shows that in terms of "constant dollars," the payments made by the borrower to service the loan over time are actually reduced from an initial 7.55
15 to a level of 6.2 by the 30th year. As the present invention demonstrates, the income paid to the deposit holder maintains a constant purchasing power, and yet in terms of constant purchasing power the stream of payments that must be made by the borrower decreases over time.

20

Tables VIII and IX show the behavior of the loan to value of ratios and debt coverage ratios over time when the property financed by the loan account cannot maintain its value at the same pace as prices increase. Table VIII
25 presents the case of the property appreciating at a rate of 1% less than the rate of inflation. In this case, the loan to value ratio is also constantly reduced and the debt coverage ratio no longer shows a continuous improvement over time but nevertheless reaches a minimum
30 value of 1.32 in the last year. Yet this is substantially higher than the norm found in the industry. Table IX shows the case where the property fails to keep up with the rate of inflation by 2% per annum. In this case, the loan to value rate will initially show a slight increase
35 and thereafter decreases although at a slower pace. The debt coverage ratio in this case decreases at a faster

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TABLE VI

AB DEPOSIT INFORMATION									
INITIAL DEPOSIT:									
TERM (years):									
REAL INTEREST RATE:									
INFLATION RATE:									
TTH ARRANGEMENT FEE:*									
TTH ANNUAL SERVICE FEE:									
LOAN INFORMATION									
TERM & AMORTIZATION:									
CONSTANT INTEREST RATE:									
ORIGINATION FEE:									
FLOAT INVESTMENT NOMINAL RATE (1):									
S&L INFORMATION									
MARGINAL TAX RATE:									
DIVIDEND PAYOUT RATIO:									
BALANCE SHEET									
YEAR	AB DEPOSIT BALANCE	LOAN BALANCE	NET WORTH (2)	ABML PMTS	AB DEPOSIT SERVICE	NET CASH FLOW	NET INCOME (2)	RETURN ON AVG ASSETS	CAPITAL TO ASSET RATIO
0	\$100.000	\$100.000	\$1.913	8.351	6.437	\$1.913	1.913	1.87%	1.82%
1	103.063	104.976	4.051	8.883	6.745	2.138	2.138	1.99	3.68
2	106.109	110.160	6.439	9.455	7.067	2.388	2.388	2.12	5.57
3	109.122	115.561	9.107	10.072	7.404	2.668	2.668	2.25	7.51
4	112.084	121.191	12.087	10.737	7.757	2.981	2.981	2.40	9.51
5	114.976	127.063	15.418	11.456	8.126	3.330	3.330	2.56	11.58
6	117.773	133.190	19.138	12.232	8.512	3.721	3.721	2.73	13.71
7	120.449	139.588	23.296	13.073	8.916	4.157	4.157	2.91	15.93
8	122.976	146.272	27.941	13.983	9.338	4.645	4.645	3.10	18.23
9	125.321	153.262	33.131	14.970	9.780	5.190	5.190	3.31	20.63
10	127.447	160.578	38.930	16.041	10.242	5.800	5.800	3.53	23.14
11	129.313	168.243	45.411	17.206	10.725	6.481	6.481	3.76	25.76
12	130.872	176.283	52.653	18.473	11.231	7.242	7.242	4.01	28.50
13	132.074	184.727	60.745	19.853	11.760	8.093	8.093	4.28	31.38
14	132.861	193.606	69.789	21.358	12.314	9.044	9.044	4.56	34.39
15	133.168	202.957	79.896	23.001	12.894	10.107	10.107	4.86	37.54
16	132.925	212.821	91.191	24.796	13.501	11.295	11.295	5.18	40.85
17	132.052	223.243	103.815	26.761	14.138	12.624	12.624	5.52	44.31
18	130.459	234.274	117.923	28.914	14.805	14.109	14.109	5.88	47.94
19	128.048	245.971	133.693	31.275	15.506	15.769	15.769	6.25	51.74
20	124.707	258.400	151.319	33.868	16.242	17.626	17.626	6.65	55.71
21	120.312	271.631	171.021	36.720	17.018	19.702	19.702	7.07	59.85
22	114.724	285.745	193.044	39.860	17.837	22.023	22.023	7.51	64.17
23	107.786	300.830	217.663	43.325	18.706	24.619	24.619	7.97	68.67
24	99.320	316.983	245.187	47.156	19.632	27.523	27.523	8.45	73.34
25	89.123	334.309	275.958	51.402	20.630	30.772	30.772	8.96	78.19
26	76.959	352.918	310.365	56.129	21.722	34.407	34.407	9.48	83.23
27	62.549	372.914	348.842	61.428	22.951	38.477	38.477	10.03	88.45
28	45.539	394.381	391.881	67.466	24.427	43.039	43.039	10.60	93.90
29	25.438	417.319	440.055	74.758	26.583	48.175	48.175	11.22	99.71
30	1.272	441.327							

(1) THIS RATE IS TREATED AS A CONSTANT; HOWEVER, IF INFLATION INCREASES FLOAT INVESTMENT RATE ALSO RISES.
(2) THE NET WORTH AND INCOME COLUMNS ARE NET OF LOAN ORIGINATION AND SERVICING COSTS, FEES, TAXES AND DIVIDENDS AT THE STATED RATE

* THE ARRANGEMENT FEE WOULD EQUAL THE ORIGINATION FEE

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TABLE VII

ANALYSIS FOR DEPOSITORY INSTITUTION:											
LOAN AMOUNT:		\$100.00		BUILDING VALUE:		\$125.00		BUILDING ROR:		9.50%	
TERM IN YEARS:		30		INFLATION:		5.00%		BUILDING ROR:		2.50%	
INTEREST RATE:		3.50%		APPRECIATION RATE:		5.00%		SPREAD:			
YEAR	ABRL PMTS	PRINCIPAL PAYMENT	INTEREST PAYMENT	INTEREST PASTTHROG	SPREAD RETAINED	ADJUSTED PRINCIPAL	BUILDING VALUE	L/V RATIO	BUILDING INCOME	DEBT COVERAGE	REAL PAYMENT
0											
1	7.9371	1.9371	6.0000	3.5000	2.5000	100.0000	125.0000	0.7852	11.8750	1.4961	7.5592
2	8.2909	2.1072	6.1838	3.6072	2.5766	103.0629	131.2500	0.7700	12.4688	1.4323	7.5201
3	8.6588	2.2922	6.3665	3.7138	2.6527	106.1089	137.8125	0.7541	13.0922	1.4400	7.4798
4	9.0410	2.4937	6.5473	3.8193	2.7281	112.0845	144.7031	0.7377	13.7468	1.4481	7.4381
5	9.4381	2.7130	6.7251	3.9230	2.8021	114.9756	159.5552	0.7207	14.4341	1.4565	7.3950
6	9.8504	2.9519	6.8985	4.0241	2.8744	117.7725	167.5120	0.7031	15.1558	1.4653	7.3505
7	10.2783	3.2120	7.0664	4.1220	2.9443	120.4492	175.8876	0.6848	15.9136	1.4745	7.3046
8	10.7222	3.4953	7.2269	4.2157	3.0112	122.9763	184.6819	0.6659	16.7093	1.4842	7.2572
9	11.1825	3.8039	7.3786	4.3042	3.0744	125.3212	193.9160	0.6463	17.5448	1.4942	7.2083
10	11.6595	4.1402	7.5193	4.3862	3.1330	127.4471	203.6118	0.6259	18.4220	1.5048	7.1579
11	12.1535	4.5067	7.6468	4.4606	3.1862	129.3128	213.7924	0.6049	19.3431	1.5158	7.1059
12	12.6649	4.9062	7.7588	4.5259	3.2328	130.8723	224.4820	0.5830	20.3103	1.5273	7.0523
13	13.1941	5.3418	7.8523	4.5805	3.2718	132.0741	235.7061	0.5603	21.3258	1.5393	6.9971
14	13.7414	5.8170	7.9244	4.6226	3.3019	132.8608	247.4914	0.5368	22.3921	1.5519	6.9403
15	14.3071	6.3354	7.9717	4.6501	3.3215	133.1684	259.8660	0.5125	23.5117	1.5651	6.8820
16	14.8916	6.9015	7.9901	4.6609	3.3292	132.9254	272.8593	0.4872	24.6873	1.5789	6.8220
17	15.4952	7.5197	7.9755	4.6524	3.3231	132.0520	286.5023	0.4609	25.9216	1.5932	6.7605
18	16.1185	8.1954	7.9231	4.6218	3.3013	130.4592	300.8274	0.4337	27.2177	1.6082	6.6976
19	16.7619	8.9344	7.8276	4.5661	3.2615	128.0478	315.8688	0.4054	28.5786	1.6238	6.6333
20	17.4263	9.7434	7.6829	4.4817	3.2012	124.7068	331.6622	0.3760	30.0075	1.6400	6.5678
21	18.1126	10.6302	7.4824	4.3647	3.1177	120.3120	348.2453	0.3455	31.5079	1.6567	6.5014
22	18.8223	11.6036	7.2187	4.2109	3.0078	114.7240	365.6576	0.3137	33.0833	1.6740	6.4344
23	19.5578	12.6743	6.8834	4.0153	2.8681	107.7858	383.9405	0.2807	34.7375	1.6916	6.3674
24	20.3224	13.8553	6.4672	3.7725	2.6946	99.3198	403.1375	0.2464	36.4743	1.7093	6.3013
25	21.1222	15.1630	5.9592	3.4762	2.4830	89.1229	423.2944	0.2105	38.2981	1.7268	6.2374
26	21.9671	16.6198	5.3474	3.1193	2.2281	76.9592	444.4591	0.1732	40.2130	1.7434	6.1781
27	22.8762	18.2587	4.6176	2.6936	1.9240	62.5485	466.6820	0.1340	42.2236	1.7578	6.1274
28	23.8894	20.1365	3.7529	2.1892	1.5637	45.5395	490.0161	0.0929	44.3348	1.7675	6.0940
29	25.1105	22.3781	2.7324	1.5939	1.1385	25.4383	514.5169	0.0494	46.5315	1.7656	6.1005
30	26.9646	25.4383	1.5263	0.8903	0.6360	1.2719	540.2428	0.0024	48.8791	1.7264	6.2390

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TABLE VIII

ANALYSIS FOR DEPOSITORY INSTITUTION:											
LOAN AMOUNT:		\$100.00	BUILDING VALUE:		\$125.00	BUILDING ROR:		9.50%			
TERM IN YEARS:		30	INFLATION:		5.00%	SPREAD:		2.50%			
INTEREST RATE:		3.50%	APPRECIATION RATE:		4.00%						
YEAR	ABWL PMTS	PRINCIPAL PAYMENT	INTEREST PAYMENT	PASSTHROUGH INTEREST	SPREAD RETAINED	ADJUSTED PRINCIPAL	BUILDING VALUE	L/V RATIO	BUILDING INCOME	DEBT COVERAGE	REAL PAYMENT
0						100.0000	125.0000				
1	7.9371	1.9371	6.0000	3.5000	2.5000	103.0629	130.0000	0.7928	11.8750	1.4961	7.5592
2	8.2909	2.1072	6.1838	3.6072	2.5766	106.1089	135.2000	0.7848	12.3500	1.4323	7.5201
3	8.6588	2.2922	6.3665	3.7138	2.6527	109.1221	140.6080	0.7761	12.8440	1.4263	7.4798
4	9.0410	2.4937	6.5473	3.8193	2.7281	112.0845	146.2323	0.7665	13.3578	1.4206	7.4381
5	9.4381	2.7130	6.7251	3.9230	2.8021	114.9756	152.0816	0.7560	13.8921	1.4153	7.3950
6	9.8504	2.9519	6.8985	4.0241	2.8744	117.7725	158.1649	0.7446	14.4478	1.4103	7.3505
7	10.2783	3.2120	7.0664	4.1220	2.9443	120.4492	164.4915	0.7323	15.0257	1.4057	7.3046
8	10.7222	3.4953	7.2269	4.2157	3.0112	122.9763	171.0711	0.7189	15.6267	1.4014	7.2572
9	11.1825	3.8039	7.3786	4.3042	3.0744	125.3212	177.9140	0.7044	16.2518	1.3974	7.2083
10	11.6595	4.1402	7.5193	4.3862	3.1330	127.4471	185.0305	0.6888	16.9018	1.3939	7.1579
11	12.1535	4.5067	7.6468	4.4606	3.1862	129.3128	192.4318	0.6720	17.5779	1.3907	7.1059
12	12.6649	4.9062	7.7588	4.5259	3.2328	130.8723	200.1290	0.6539	18.2810	1.3879	7.0523
13	13.1941	5.3418	7.8523	4.5805	3.2718	132.0741	208.1342	0.6346	19.0123	1.3855	6.9971
14	13.7414	5.8170	7.9244	4.6226	3.3019	132.8608	216.4596	0.6138	19.7727	1.3836	6.9403
15	14.3071	6.3354	7.9717	4.6501	3.3215	133.1684	225.1179	0.5915	20.5637	1.3820	6.8820
16	14.8916	6.9015	7.9901	4.6609	3.3292	132.9254	234.1227	0.5678	21.3862	1.3809	6.8220
17	15.4952	7.5197	7.9755	4.6524	3.3231	132.0520	243.4876	0.5423	22.2417	1.3802	6.7605
18	16.1185	8.1954	7.9231	4.6218	3.3013	130.4592	253.2271	0.5152	23.1313	1.3799	6.6976
19	16.7619	8.9344	7.8276	4.5661	3.2615	128.0478	263.3561	0.4862	24.0566	1.3800	6.6333
20	17.4263	9.7434	7.6829	4.4817	3.2012	124.7068	273.8904	0.4553	25.0188	1.3805	6.5678
21	18.1126	10.6302	7.4824	4.3647	3.1177	120.3120	284.8460	0.4224	26.0196	1.3813	6.5014
22	18.8223	11.6036	7.2187	4.2109	3.0078	117.7240	296.2398	0.3873	27.0604	1.3824	6.4344
23	19.5578	12.6743	6.8834	4.0153	2.8681	114.7858	308.0894	0.3499	28.1428	1.3836	6.3674
24	20.3224	13.8553	6.4672	3.7725	2.6946	99.3198	320.4130	0.3100	29.2685	1.3848	6.3013
25	21.1222	15.1630	5.9592	3.4762	2.4830	89.1229	333.2295	0.2675	30.4568	1.3857	6.2374
26	21.9671	16.6198	5.3474	3.1193	2.2281	76.9592	346.5587	0.2221	31.6568	1.3857	6.1781
27	22.8762	18.2587	4.6176	2.6936	1.9240	62.5485	360.4211	0.1735	32.9231	1.3838	6.1174
28	23.8894	20.1365	3.7529	2.1892	1.5637	45.5395	374.8379	0.1215	34.2400	1.3781	6.0540
29	25.1105	22.3781	2.7324	1.5939	1.1385	25.4383	389.8314	0.0653	35.6096	1.3636	6.1005
30	26.9646	25.4383	1.5263	0.8903	0.6360	1.2719	405.4247	0.0031	37.0340	1.3206	6.2390

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TABLE IX

ANALYSIS FOR DEPOSITORY INSTITUTION:											
LOAN AMOUNT:	\$100.00	BUILDING VALUE:	\$125.00	BUILDING FOR:	9.50%	TERM IN YEARS:	30	INFLATION:	5.00%	SPREAD:	2.50%
INTEREST RATE:	3.50%	APPRECIATION RATE:	3.00%								
YEAR	ABRL PMTS	PRINCIPAL PAYMENT	INTEREST PAYMENT	PASTDROUG RETAINED	SPREAD	ADJUSTED PRINCIPAL	BUILDING VALUE	L/V RATIO	BUILDING INCOME	DEBT COVERAGE	REAL PAYMENT
0						100.0000	125.0000				
1	7.9371	1.9371	6.0000	3.5000	2.5000	103.0629	128.7500	0.8005	11.8750	1.4961	7.5592
2	8.2909	2.1072	6.1838	3.6072	2.5766	106.1089	132.6125	0.8001	12.2313	1.4323	7.5201
3	8.6588	2.2922	6.3665	3.7138	2.6527	109.1221	136.5909	0.7989	12.5982	1.4126	7.4798
4	9.0410	2.4937	6.5473	3.8193	2.7281	112.0845	140.6886	0.7967	12.9761	1.3934	7.4381
5	9.4381	2.7130	6.7251	3.9230	2.8021	114.9756	144.9093	0.7934	13.3654	1.3749	7.3950
6	9.8504	2.9519	6.8985	4.0241	2.8744	117.7725	149.2565	0.7891	13.7664	1.3568	7.3505
7	10.2783	3.2120	7.0664	4.1220	2.9443	120.4492	153.7342	0.7835	14.1794	1.3394	7.3046
8	10.7222	3.4953	7.2269	4.2157	3.0112	122.9763	158.3463	0.7766	14.6048	1.3224	7.2572
9	11.1825	3.8039	7.3786	4.3042	3.0744	125.3212	163.0966	0.7684	15.0429	1.3060	7.2083
10	11.6595	4.1402	7.5193	4.3862	3.1330	127.4471	167.9895	0.7587	15.4942	1.2902	7.1579
11	12.1535	4.5067	7.6468	4.4606	3.1862	129.3128	173.0292	0.7473	15.9590	1.2749	7.1059
12	12.6649	4.9062	7.7588	4.5259	3.2328	130.8723	178.2201	0.7343	16.4378	1.2601	7.0523
13	13.1941	5.3418	7.8523	4.5805	3.2718	132.0741	183.5667	0.7195	16.9309	1.2458	6.9971
14	13.7414	5.8170	7.9244	4.6226	3.3019	132.8608	189.0737	0.7027	17.4388	1.2321	6.9403
15	14.3071	6.3354	7.9717	4.6501	3.3215	133.1684	194.7459	0.6838	17.9620	1.2189	6.8820
16	14.8916	6.9015	7.9901	4.6609	3.3292	132.9234	200.5883	0.6637	18.5009	1.2062	6.8220
17	15.4952	7.5197	7.9755	4.6524	3.3231	132.0520	206.6060	0.6391	19.0539	1.1940	6.7605
18	16.1185	8.1954	7.9231	4.6218	3.3013	130.4592	212.8041	0.6130	19.6276	1.1822	6.6976
19	16.7619	8.9344	7.8276	4.5661	3.2615	128.0478	219.1883	0.5842	20.2164	1.1710	6.6333
20	17.4263	9.7434	7.6829	4.4817	3.2012	124.7068	225.7639	0.5524	20.8229	1.1601	6.5678
21	18.1126	10.6302	7.4824	4.3647	3.1177	120.3170	232.5368	0.5174	21.4476	1.1496	6.5014
22	18.8223	11.6036	7.2187	4.2109	3.0078	114.7240	239.5129	0.4750	22.0910	1.1395	6.4344
23	19.5578	12.6743	6.8834	4.0153	2.8681	107.7858	246.6983	0.4309	22.7537	1.1295	6.3674
24	20.3224	13.8553	6.4672	3.7762	2.6946	99.1318	254.0993	0.3909	23.4363	1.1196	6.3013
25	21.1222	15.1630	5.9592	3.4762	2.4830	89.1229	261.7222	0.3405	24.1394	1.1096	6.2374
26	21.9671	16.6198	5.3474	3.1193	2.2281	76.9592	269.5739	0.2835	24.8636	1.0989	6.1781
27	22.8762	18.2587	4.6176	2.6936	1.9240	62.5485	277.6611	0.2253	25.6078	1.0869	6.1274
28	23.8894	20.1365	3.7529	2.1892	1.5637	45.5335	285.9910	0.1592	26.3778	1.0750	6.0940
29	25.1105	22.3781	2.7324	1.5939	1.1385	25.4383	294.5707	0.0864	27.1691	1.0525	6.1005
30	26.9646	25.4383	1.5263	0.8903	0.6360	1.2719	303.4078	0.0042	27.9842	1.0076	6.2390

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rate and yet by the 30th year is still higher than 1. This means that the income generated by the property will fully cover the cost of debt service associated with the loan at that time.

5

While matching will reduce the interest rate exposure of the intermediary it will not increase credit risk. In fact, because the borrower's debt service on an inflation-adjusting loan with a 300 basis point markup is quite modest at 8.25 per \$100, there is substantial debt coverage.

This option is especially attractive to intermediaries that undertake interim construction loans on real estate because the long-term inflation-adjusting deposit accounts with its potential to finance a long-term inflation-adjusting Mortgage loans would provide permanent takeout money for the intermediary. This would be true either by design or necessity. In this case the intermediary enters a fully matched-book program on a long-term rather than a short-term basis.

In order to maintain the longevity of the match, the deposit and loan account would provide for substantial penalties for early withdrawal and correspondingly, the loan account would carry a substantial prepayment penalty. These penalties do not significantly detract from the appeal of both the deposit and loan accounts.

The foregoing invention has been described in terms of preferred embodiments. However, those of skill in the art will recognize that many variations of such embodiments exist. Such variations are intended to be within the scope of the present invention and the appended claims.

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